

Claims

1. A method for producing chewing gum granules and compressed gum products, wherein the method comprises at least the steps of:

- a) feeding a gum composition including at least gum base into an extruder;
- b) pressurizing the gum composition in the extruder;
- 10 c) extruding the gum composition through a die plate;
- d) cutting the extruded gum composition into gum granules in a liquid filled chamber, said cut gum granules include at least gum base in the range of 71 to 99% Wt. based on a total weight of the granules, together with at least one taste ingredient in the range of 0.1 to 29% Wt. based on the total weight of the granules and; said method further comprising the steps of conveying at least the extruded gum granules to a tabletting machine; and pressing at least the gum granules into compressed chewing gum tablets in the tablet pressing machine.

2. A method according to claim 1, wherein the gum granules include gum base in the range of 86 to 99% Wt. based on the total weight of the granules.

3. A method according to claim 2, wherein the gum granules include gum base in the range of 91 to 99% Wt. based on the total weight of the granules.

4. A method according to claim 1, wherein the gum composition in step a) is gum base.

5. A method according to claim 1, wherein the taste ingredient is a sweetener.

6. A method according to claim 5, wherein the gum composition is mixed with sweetener during step b).

7. A method according to claim 5, wherein the granules comprise sweetener in the range of 0.1 to 15% Wt. based on the total weight of the granules.

8. A method according to claim 7, wherein the
5 granules comprise sweetener in the range of 0.2 to 10% Wt. based on the total weight of the granules.

9. A method according to claim 8, wherein the granules comprise sweetener in the range of 0.5 to 4.9% Wt. based on the total weight of the granules.

10 10. A method according to claim 5, wherein the sweetener is an intense sweetener.

11. A method according to claim 1, wherein the taste ingredient is a flavour.

12. A method according to claim 11, wherein the
15 gum composition is mixed with flavour during step b).

13. A method according to claim 11, wherein the granules comprise flavour in the range of 0.1 to 15% Wt., based on the total weight of the granules.

14. A method according to claim 13, wherein the
20 granules comprise flavour in the range of 1 to 10% Wt. based on the total weight of the granules.

15. A method according to claim 14, wherein the granules comprise flavour in the range of 2 to 5% Wt. based on the total weight of the granules.

25 16. A method according to claim 1, wherein an average diameter of the cut granules is in a range from 0.1 mm to 3.1 mm,

17. A method according to claim 16, wherein an average diameter of the cut granules is in a range
30 from 0.25 to 2.5 mm,

18. A method according to claim 17, wherein an average diameter of the cut granules is in a range from 0.3 to 2.1 mm.

19. A method according to claim 1, wherein said
35 die plate has die openings of at least two different

sizes, and said gum composition in step c) is extruded through said die openings to simultaneously obtain granules with different average diameters.

20. A method according to claim 19, wherein a
5 first fraction of the extruded granules has a first average diameter, and a second fraction of the extruded granules has a second average diameter larger than said first average diameter.

21. A method according to claim 20, wherein the
10 first average diameter is in a range from 0.1 to 0.95 mm,

22. A method according to claim 21, wherein the first average diameter is in a range from 0.25 to 0.9 mm,

15 23. A method according to claim 20, wherein the second average diameter is in a range from 0.6 to 1.9 mm,

24. A method according to claim 23, wherein the second average diameter is in the range from 0.8 to
20 1.4 mm.

25. A method according to claim 1, wherein the method comprises the further step of substantially removing surface liquid from the extruded granules.

26. A method according to claim 1, wherein the
25 method comprises the further step of classifying the extruded granules.

27. A method according to claim 1, wherein the method comprises the further step of mixing the extruded granules with one or more ingredients selected
30 from the group consisting of flavours, sweeteners, intense sweeteners, colouring agents, fillers, and tabletting aids.

28. A method according to claim 1, wherein the tablets comprise gum base in the range from 28 to 70%
35 Wt. based on the total weight of the tablets.

29. A method according to claim 28, wherein the tablets comprise gum base preferably in the range from 30 to 45% Wt. based on the total weight of the tablets.

5 30. A method according to claim 29, wherein the tablets comprise gum base in the range from 31 to 39% Wt. based on the total weight of the tablets.

31. A method according to claim 1, wherein the method comprises the further step of coating the compressed tablets, the coating mainly comprises one or more coatings or ingredients selected from the group consisting of cornstarch, sugar compounds, polyols, cellulose ethers, hydroxypropylmethylcellulose, acrylic polymers and copolymers, sugarless/sugarfree coatings, sweeteners, flavours, waxes, and colours.

32. A method according to claim 1, wherein the method comprises the further step of coating the granules, the coating mainly comprises one or more coatings or ingredients selected from the group consisting of magnesium stearate, cornstarch, sugar compounds, polyols, cellulose ethers, acrylic polymers and copolymers, sugarless/sugarfree coatings, sweeteners, flavours, waxes, and colours.

33. Use of the methods according to any one of claims 1 to 32 in the production of a chewing gum product, such as compressed chewing gum tablets.

34. A chewing gum product obtained by any of the methods according to any one of the claims 1-34.

35. A chewing gum product comprising compressed gum composition granules wherein a first fraction of the gum composition granules has a first average diameter, and at least a second fraction of the gum composition granules has a second average diameter larger than said first average diameter.

36. A chewing gum product according to claim 35

wherein the chewing gum product further comprises granules of taste ingredient(s).

37. A chewing gum product according to claim 36 wherein the taste ingredient is a sweetener.

5 38. A chewing gum product according to claim 36 wherein the taste ingredient is a flavour.

39. A chewing gum granulating system for use in producing compressed chewing gum products, wherein said system comprises an extruder with a feeding device for feeding gum composition to the extruder, said extruder communicating with a liquid filled granulating chamber via a die device having a plurality of openings, and wherein the die device has a first plurality of openings with a first size and at least a second plurality of openings with a second size larger than said first size.

40. A chewing gum granulating system according to claim 39, wherein the die device comprises openings with substantially circular cross-section including a first set of openings having a first diameter, and a second set of opening having a second diameter larger than said first diameter.

41. A chewing gum granulating system according to claim 40, wherein the first diameter is in the range of 0.07 to 0.7 mm,

42. A chewing gum granulating system according to claim 41, wherein the first diameter is in the in the range of 0.15 to 0.6 mm,

42. A chewing gum granulating system according to claim 40, wherein the second diameter is in the range of 0.4 to 2.1 mm,

43. A chewing gum granulating system according to claim 42, wherein the second diameter is in the range of 0.7 to 1.9 mm.

35 44. A chewing gum granulating system according

to claim 39, wherein the system further comprises a drying device adding powder sweetener to the granules in a final drying step.

5 45. A chewing gum granulating system according to claim 44, wherein said powder sweetener being added while moisture is remaining on the surface of the granules.

10 46. A chewing gum granulating system according to claim 39, wherein the system further comprises one or more sieves adapted for removing granules with average diameters above 2.55 mm.

47. A chewing gum granulating system according to claim 39, wherein the system further comprises a tabletting machine.

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